Credit Name: CSE 2140 2nd Language Programming

Assignment Name: Project Mastery

How has your program changed from planning to coding to now? Please explain?

PLANNING:

I planned to declare and initialize the variables that are going to be used in the program, ask for userinput, calculate the percentage of time taken for each task, and finally print the calculated percentages.

CODING:

1. The program starts with declaring deca to create a Decimal format (this is used near the end of the program when calculating percentages, but I decided to put it at the beginning of the program where I'm declaring everything). After deca, the integers designing, coding, debugging, and testing are declared. The Double (decimal) values totalminutes, total design, totalcode, total debug, and total test are also declared.

```
//deca in decimal format, used when printing the percentage of time taken for each task (near t
 DecimalFormat deca = new DecimalFormat("#.##");

//Declare the integer and double variables:
int designing = 0;
int coding = 0;
int debugging = 0;
int testing = 0;

double totalMinutes = 0;
double totalDesign = 0;
double totalCode = 0;
double totalDebug = 0;
double totalTest = 0;
```

2. Scanner is set, preparing for userinput. The intro messages are printed to the user, then the user is asked for the amount of time spent for each part of programming. The user input values are put into the int variables which we declared in step 1 above.

```
//preparing for user input
Scanner userInput = new Scanner(System.in);

//intro message
//Prompt user for the time taken for each task, and store the input values in the corresponding integer variable:
System.out.println("This program helps you calculate how much time each step of coding takes!");

System.out.println("Enter the values below in minutes");

System.out.println("Please enter the time spent for Designing:");
designing += userInput.nextInt();

System.out.println("Please enter the time spent for Coding:");
coding += userInput.nextInt();

System.out.println("Please enter the time spent for Debugging:");
debugging += userInput.nextInt();

System.out.println("Please enter the time spent for Testing:");
testing += userInput.nextInt();
```

3. Now we are computing the values. Total minutes variable stores the sum of the userinputs, which gives us the total time. The rest of the double variables we declared in step 1 are calculated by taking the decimal value userinput, divided by the decimal value of the total time, and then multiplied by 100. This computation gives the percentage of time taken for each task.

```
//computation using user inputs; converting time spent into a percentage out of 100:
totalMinutes = designing + coding + debugging + testing;

totalDesign = (Double.valueOf(designing) / Double.valueOf(totalMinutes))*100;

totalCode = (Double.valueOf(coding) / Double.valueOf(totalMinutes))*100;

totalDebug = (Double.valueOf(debugging) / Double.valueOf(totalMinutes))*100;

totalTest = (Double.valueOf(testing) / Double.valueOf(totalMinutes))*100;
```

4. After computation, we have to print the calculated percentage values using system.out.println. This will give us a new line for each print statement. To create the look of a table, I added spacing inbetween the headers Task and %Time, as well as the words under the two sections. deca.format() is used on the calculated values to create a percentage value that is a decimal number, for more accuracy and less rounded numbers. When printing I forgot to add a newline element between Designing and Coding, which I explained in my Error Log.

```
//Print the output percentages of time spent on each task:
  System.out.println("Task      %Time");
  System.out.println("Designing:    " + deca.format(totalDesign) + "%");
  System.out.println("Coding:       " + deca.format(totalCode) + "%");
  System.out.println("Debugging:    " + deca.format(totalDebug) + "%");
  System.out.println("Testing:  " + deca.format(totalTest) + "%");
```

End of Program!